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| AD367461                                       |   |
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| TO:  | unclassified  |
| FROM:  | confidential  |
| LIMITATION CHANGES                             |   |
| TO:  | Approved for public release, distribution unlimited   |
| FROM:  | Distribution: USGO: others to Director, Defense Atomic Support Agency, Washington, D. C. 20301. |
| AUTHORITY                                      |   |
| DSWA ltr., 18 Apr 1997; DSWA ltr., 18 Apr 1997 |   |

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XRD-102

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⑨ BUREAU OF SHIPS GROUP  
TECHNICAL INSPECTION REPORT

Classification (Cancelled) (Changed to  
By Authority of JOINT CHIEFS OF STAFF JCS 1795/36 DATED 15 APRIL 1949  
By *John H. Dwyer* Date 22 SEP 1953

⑥ OPERATION CROSSROADS,  
U.S.S. RHIND (DD404).

⑧  
TEST BAKER [U]

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⑪ 1947 ⑫ 33 p.

Director  
Defense Atomic Support Agency  
Washington, D. C. 20301

⑭ XRD-102

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OPERATION CROSSROADS

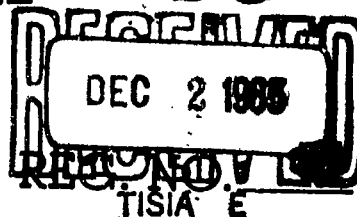
DIRECTOR OF SHIP MATERIAL

JOINT TASK FORCE ONE

DDC

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GROUP-3 1 JAN 1965  
Downgraded at 12 year intervals;  
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Its transmission or the revelation of its contents in any  
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APPROVED:

F.X. Forest,  
Captain, U.S.N.

SECRET

USS RHIND (DD404)

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USS RHIND (DD404)

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U.S.S. RHIND (DD 404)

SHIP CHARACTERISTICS

Building Yard: Philadelphia Naval Shipyard.

Commissioned: 10 November 1939.

HULL

Length Overall: 340 feet 9 inches.

Length on Waterline: 334 feet 0 inches.

Beam (extreme): 35 feet 6 inches.

Depth (molded at side, to main deck, amidships):  
19 feet 7 <sup>7</sup>/<sub>8</sub> inches.

Drafts at time of test: Fwd. 12 feet 4 inches.

Aft. 12 feet 10 inches.

Standard displacement: 1,500 tons.

Displacement at time of test: 2,196 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of Westinghouse main turbines are installed, one set per shaft.

Reduction Gears: Two sets of "Falk" double reduction are installed, one set per shaft.

Main Condensers: Two are installed in ship.

Boilers: Three Babcock and Wilcox boilers are installed in ship. 565 psi. gauge - 705° F.

Propellers: Two are installed in ship.

Main Shafts: Two are installed.

Ships Service Generators: Four are installed in ship.

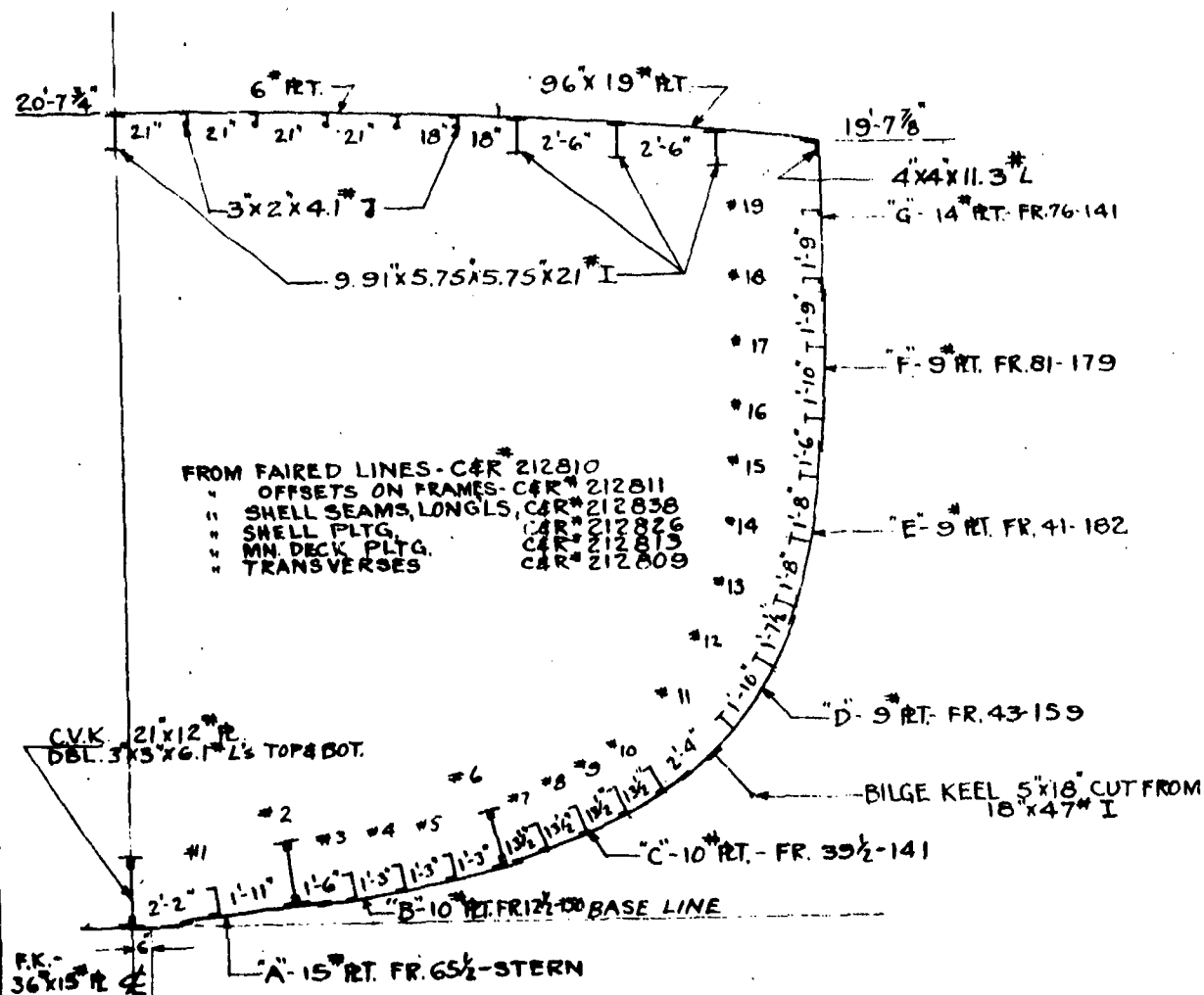
Two 132 KW. - A.C., and two 40 KW.- D.C. units.

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USS RHIND (DD404)

LONG L 1-9x2 1/4x13.4 C  
 " 2-19 1/4x7 RT. 5x2x4.1 L  
 " 3-4-5-8x2 1/4x11.5 C  
 " 6-17x7 RT. 3x2x4.1 L  
 " 7-8-9-10-8x2 1/4x11.5 C  
 " 11-12-13-14-6x3.06x5.87 T's  
 " 15-16-17-5x2.69x4.48 T's  
 " 18-19-5x1 1/4x1 1/4x6.7 C

7.65" WEB SPCD-7'-0"  
 KEEL BKT. SPCD.- EVERY FRAME



## MIDSHIP SECTION

### TEST B

U.S.S. RHIND (DD404)

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# TECHNICAL INSPECTION REPORT

## OVERALL SUMMARY

### I. Target Condition After Test.

#### (a) Drafts after test; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list. There was normal leakage of six inches of water into both engine rooms during a two week period.

#### (b) Structural damage.

##### HULL

None.

##### MACHINERY

No comment.

##### ELECTRICAL

No structural damage occurred.

#### (c) Other damage.

##### HULL

No comment.

##### MACHINERY

There was no damage to the machinery of this vessel during Test B insofar as can be determined by visual inspection. It was not practicable to operate any machinery on this vessel after Test B because of radioactivity, which was high when the ship was inspected 16 days after the test.

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U.S.S. RHIND (DD404)

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ELECTRICAL

No damage to electrical equipment occurred due to Test B.

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No evidence of heat was observed.

(b) Fires and explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of fires or explosions.

(c) Shock.

HULL

None.

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U.S.S. RHIND (DD404)



MACHINERY

No evidence.

ELECTRICAL

There was no evidence of shock.

(d) Pressure.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No evidence of pressure was observed.

(e) Effects peculiar to the Atom Bomb.

HULL

None.

MACHINERY

None.

ELECTRICAL

There were no effects apparently peculiar to the Atom Bomb other than radioactivity.

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U.S.S. RHIND (DD404)

III. Effects of Damage.

- (a) Effect on machinery, electrical, and ship control.

HULL

No comment.

MACHINERY

None, except for possible effects of radioactivity.

ELECTRICAL

No damage occurred.

- (b) Effect on gunnery and fire control.

HULL

No comment.

MACHINERY

No comment.

ELECTRICAL

No damage occurred.

- (c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

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U.S.S. RHIND (DD404)

ELECTRICAL

No effect was noted.

(c) Effect on personnel and habitability.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

No electrical effect occurred.

(e) Effect on fighting efficiency.

HULL

No effects other than those of radioactivity.

MACHINERY

None, except for possible effects of radioactivity.

ELECTRICAL

No damage occurred.

IV. General Summary of Observers' Impressions and Conclusions.

HULL

None.

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U.S.S. RHIND (DD404)

## MACHINERY

The RHIND was outside the effective range of mechanical damage from the explosion of Test B.

## ELECTRICAL

The distance of this ship was too great to result in any damage to electrical equipment directly or indirectly attributable to the subsurface blast.

The only damage was done by water through vent ducts. This water came from washing down in decontamination and rain.

## V. Preliminary Recommendations.

### HULL

None.

### MACHINERY

None.

### ELECTRICAL

Ends of vent ducts should not be located so as to allow water to drip over electrical equipment.

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U.S.S. RHIND (DD404)

# TECHNICAL INSPECTION REPORT

## SECTION I - HULL

### GENERAL SUMMARY OF HULL DAMAGE

#### I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list. There was normal leakage of six inches of water into both engine rooms during a two week period.

- (b) Structural damage.

None.

- (c) Other damage.

Not observed.

#### II. Forces Evidenced and Effects Noted.

- (a) Heat.

None.

- (b) Fires and explosions.

None.

- (c) Shock.

None.

- (d) Pressure.

None.

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USS RHIND (DD404)

(e) Effects peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

No effects other than those of radioactivity.

IV. General Summary of Observers' Impressions and Conclusions.

None.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

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USS RHIND (DD404)

VI. Instructions for Loading the Vessel Specified the Following:

| ITEM                           | LOADING  |
|--------------------------------|----------|
| Fuel Oil                       | 50%      |
| Diesel Oil                     | 50%      |
| Ammunition                     | 50%      |
| Potable and reserve feed water | 95%      |
| Salt water ballast             | 160 tons |

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the Ship's Force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

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USS RHIND (DD404)

## DETAILED DESCRIPTION OF HULL DAMAGE

### A. General Description of Hull Damage.

There is no apparent hull damage. Normal leakage into the engine rooms occurred. Draft and list readings prior to and following the test were identical. Photos pages 20 to 21 show the ship before and after Test B.

### B. Superstructure.

Water was found in radio central compartment A0104C and passageway A0104L. This was presumable from rain leakage and washing down water from tugs. The water entered through vent ducts and areas damaged during Test A.

### C. Turrets, Guns and Directors.

No damage.

### D. Torpedo Mounts, Depth Charge Gear.

No damage.

### E. Weather Deck.

No damage.

### F. Exterior Hull.

No damage.

### G. Interior Compartments (above w.l.).

No damage.

### H. Armor Decks and Miscellaneous Armor.

Not Applicable.

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USS RHIND (DD404)



I. Interior Compartments (below w.l.).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

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USS RHIND (DD404)

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# TECHNICAL INSPECTION REPORT

## SECTION II - MACHINERY

### GENERAL SUMMARY OF MACHINERY DAMAGE

#### I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

There was no damage to the machinery of this vessel during Test B insofar as can be determined by visual inspection. It was not practicable to operate any machinery on this vessel after Test B because of radioactivity, which was high when the ship was inspected 16 days after the test.

#### II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

SECRET

USS RHIND (DD404)

No evidence.

(e) Any effects apparently peculiar to the atom bomb.

None.

### III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

None, except for possible effects of radioactivity.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on watertight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None, except radioactivity.

(e) Total effect on fighting efficiency.

None, except for possible effects of radioactivity.

### IV. General Summary of Observers' Impressions and Conclusions.

The RHIND was outside the effective range of mechanical damage from the explosion of Test B.

### V. Preliminary Recommendation.

None.

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USS RHIND (DD404)

## DETAILED DESCRIPTION OF MACHINERY DAMAGE

### A. General Description of Machinery Damage.

A visual inspection was made of all the main and auxiliary machinery. Apparently no machinery was damaged by Test B.

#### (a) Overall condition.

The overall condition of the machinery was not changed by Test B.

#### (b) Areas of major damage.

Not applicable.

#### (c) Primary cause of damage.

Not applicable.

#### (d) Effect of target test on overall operation of machinery plant.

All of the main and auxiliary machinery is operable as far as can be determined by visual inspection.

### B. Boilers.

No apparent damage.

### C. Blowers.

No apparent damage. The blowers all turned freely by hand.

### D. Fuel Oil Equipment.

No apparent damage.

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USS RHIND (DD404)

E. Boiler Feedwater Equipment.

No apparent damage.

F. Main Turbines.

No apparent damage.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

No apparent damage.

K. Pumps.

No apparent damage.

L. Auxiliary Generators.

No apparent damage.

M. Propellers.

No apparent damage. The propellers were observed from the surface of the water.

N. Distilling Plant.

No apparent damage.

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USS RHIND (DD404)

O. Refrigerating Plant.

No apparent damage.

P. Winches, Windlasses and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc.

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Air Compressors.

No apparent damage.

U. Diesels (Generators and Boats)

No apparent damage.

V. Piping.

No apparent damage.

W. Miscellaneous.

No apparent damage.

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USS RHIND (DD404)

# TECHNICAL INSPECTION REPORT

## SECTION III - ELECTRICAL

### GENERAL SUMMARY OF ELECTRICAL DAMAGE

#### I. Target Condition After Test.

##### (a) Drafts after test; list; general areas of flooding sources.

Drafts the same as before Test B.

No flooding occurred due to Test B.

##### (b) Structural damage.

No structural damage occurred.

##### (c) Other damage.

No damage to electrical equipment occurred due to Test B.

#### II. Forces Evidenced and Effects Noted.

##### (a) Heat.

No evidence of heat was observed.

##### (b) Fires and explosions.

There was no evidence of fires or explosions.

##### (c) Shock.

There was no evidence of shock.

##### (d) Pressure.

No evidence of pressure was observed.

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USS RHIND (DD404)

- (e) Any effects apparently peculiar to the atom bomb.

There were no effects apparently peculiar to the atom bomb other than radioactivity.

### III. Effects of Damage.

- (a) Effect on propulsion and ship control.

No damage occurred.

- (b) Effect on gunnery and fire control.

No damage occurred.

- (c) Effect on water-tight integrity and stability.

No effect was noted.

- (d) Effect on personnel and habitability.

No electrical effect occurred.

- (e) Total effect on fighting efficiency.

No damage occurred.

### IV. General Summary of Observers' Impressions and Conclusions.

The distance of this ship was too great to result in any damage to electrical equipment directly or indirectly attributable to the subsurface blast.

The only damage was done by water through vent ducts. This water came from washing down in decontamination and rain.

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USS RHIND (DD404)



V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

Ends of vent ducts should not be located so as to allow water to drip over electrical equipment.

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## DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

### A. General Description of Electrical Damage.

#### (a) Overall condition.

The electrical plant is essentially the same as before Test B.

#### (b) Areas of major damage.

No major damage occurred.

#### (c) Primary causes of damage in each area of major damage.

No damage occurred.

#### (d) Effect of target test on overall operation of electric plant.

The electrical plant is the same as before Test B.

#### (e) Types of electrical equipment most affected.

No electrical equipment was affected.

### B. Electric Propulsion Rotating Equipment.

Not Applicable.

### C. Electric Propulsion Control Equipment.

Not Applicable.

### D. Generators - Ships Service.

No damage occurred.

### E. Generators Emergency.

No damage occurred. Fathometer readings continued for at least two hours after the test.

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USS RHIND (DD404)

F. Switchboards, Distribution and Transfer Panels.

No damage occurred.

G. Wiring, Wiring Equipment and Wireways.

No damage occurred.

H. Transformers.

No damage occurred.

I. Submarine Propelling Batteries.

Not Applicable.

J. Portable Batteries.

No damage occurred.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage occurred.

L. Lighting Equipment.

No damage occurred.

M. Searchlights.

No damage occurred.

N. Degaussing Equipment.

No damage occurred.

O. Gyro Compass Equipment.

No damage occurred.

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USS RHIND (DD404)

P. Sound Powered Telephones.

No damage occurred.

Q. Ship's Service Telephones.

Not Applicable.

R. Announcing Systems.

No damage occurred.

S. Telegraphs.

No damage occurred.

T. Indicating Systems.

No damage occurred.

U. I.C. and A.C.O. Switchboards.

No damage occurred.

V. F.C. Switchboard.

No damage occurred.

W. Special 660 Material.

No damage occurred.

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USS RHIND (DD404)

## **SECTION IV**

### **PHOTOGRAPHS**

#### **TEST BAKER**

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**USS RHIND (DD404)**



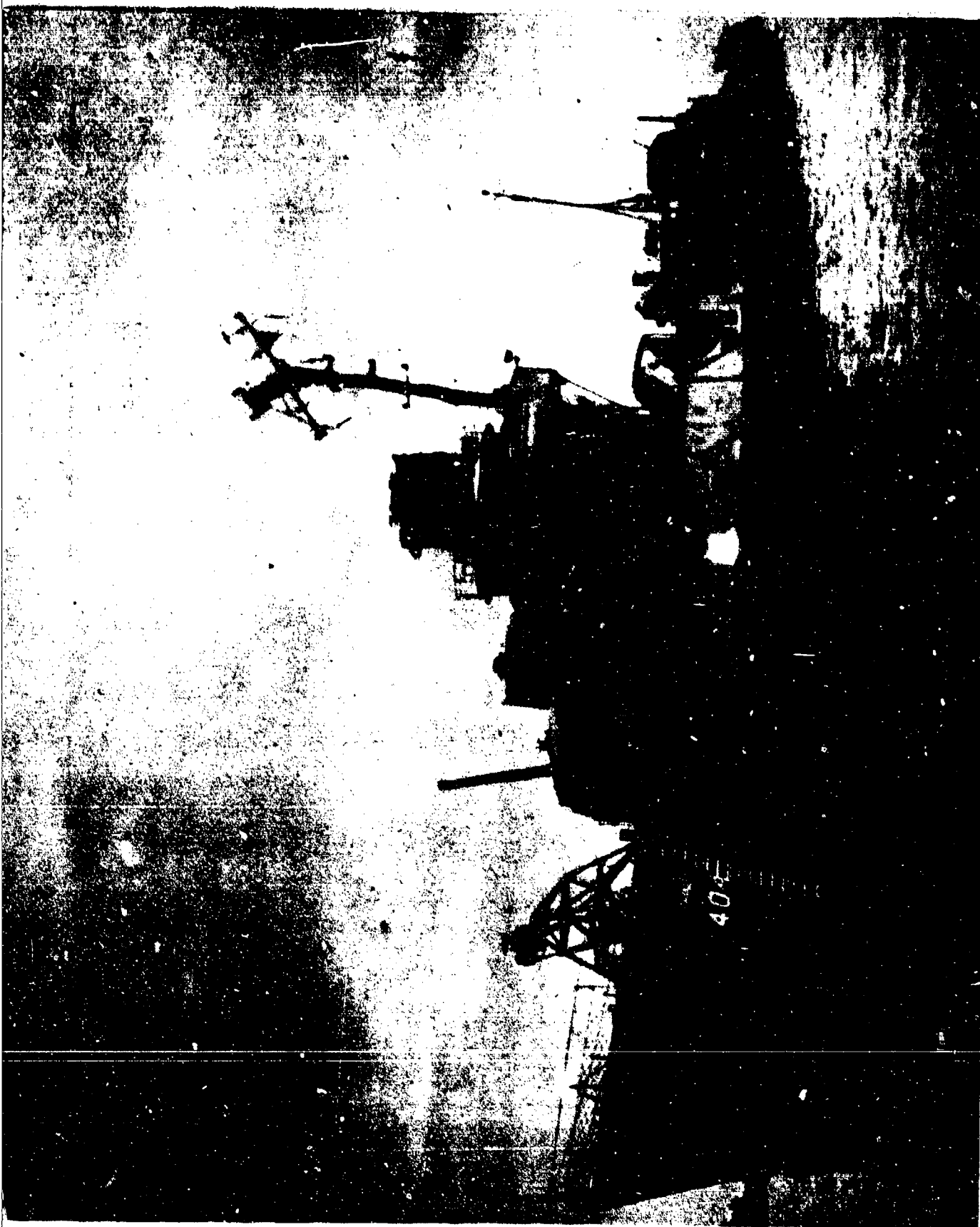
BB-CR-520-520-46. - Port bow before Test B.

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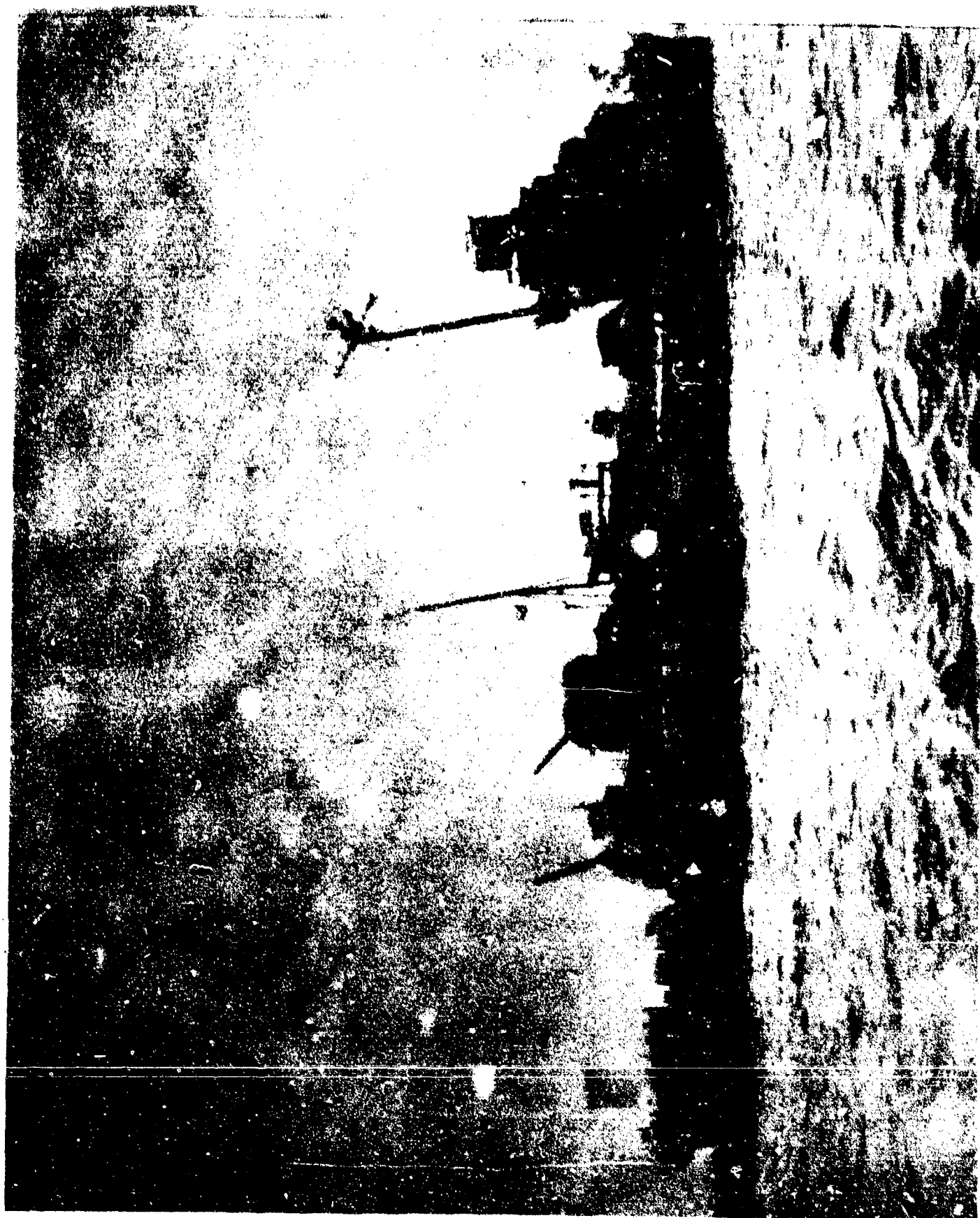
AB-CR-227-283-58. Port bow after Test B.

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USS RHIND (DD404)

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BB-CR-520-520-42. Starboard quarter before Test B.

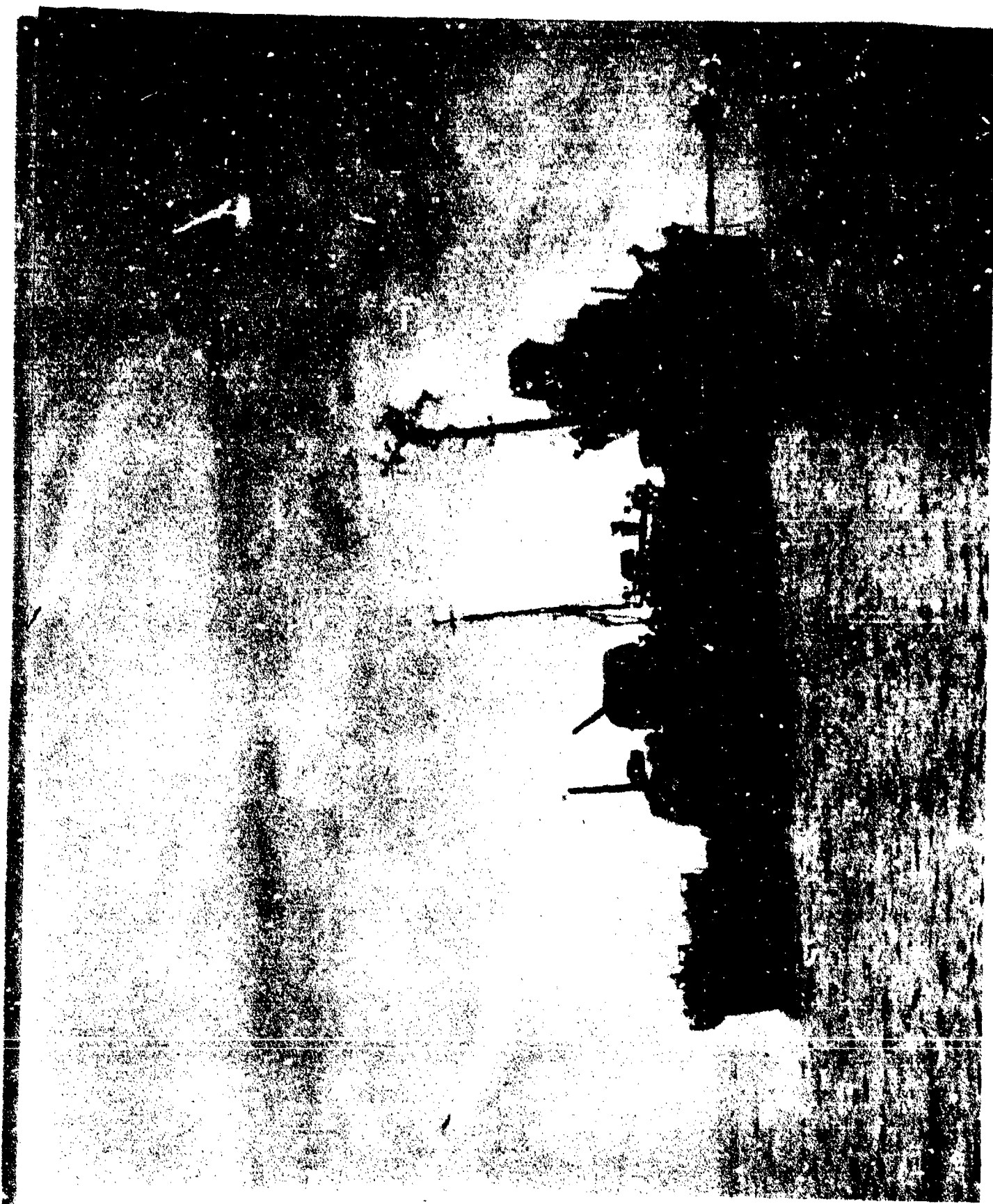
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USS RHIND (DD404)

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AB-CR-227-283-61. Starboard quarter after Test B.

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APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

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USS RHIND (DD404)

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COMMANDING OFFICERS REPORT

REPORT # 5

The USS RHIND (DD404) was boarded on 10 August 1946 by an inspecting party which remained on board for about one and one half hours. No major damage was discovered which could be traced to the Test "B" explosion.

There was considerable water found through the superstructure compartments, but this was due to rain and decontamination effort since the test. There was no flooding through the hull, and no evidence of shock damage.

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USS RHIND (DD404)



Defense Special Weapons Agency  
6801 Telegraph Road  
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER  
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

|                          |                         |
|--------------------------|-------------------------|
| ✓AD-366588 <del>4</del>  | XRD-203-Section 12 ✓    |
| AD-366589 ✓              | XRD-200-Section 9       |
| AD-366590 ✓              | XRD-204-Section 13      |
| AD-366591 ✓              | XRD-183                 |
| ✓AD-366586 <del>x</del>  | XRD-201-Section 10 ✓    |
| ✓AD-367487 <del>4</del>  | XRD-131-Volume 2 ✓      |
| ✓AD-367516 <del>4</del>  | XRD- <del>1</del> 143 ✓ |
| ✓AD-367493 <del>4</del>  | XRD-142 ✓               |
| AD-801410L ✓             | XRD-138                 |
| AD-376831L ✓             | XRD-83                  |
| AD-366759 ✓              | XRD-80                  |
| ✓AD-376830L <del>4</del> | XRD-79 ✓                |
| ✓AD-376828L <del>4</del> | XRD-76 ✓                |
| ✓AD-367464 <del>x</del>  | XRD-106 ✓               |
| AD-801404L ✓             | XRD-105-Volume 1        |
| ✓AD-367459 <del>x</del>  | XRD-100 ✓               |

TRC

18 April 1997

Subject: Declassification of Report

|                |                         |
|----------------|-------------------------|
| AD-376836L ✓   | XRD-98                  |
| AD-376835L ✓   | XRD-97                  |
| AD-376834L ✓   | XRD-96                  |
| AD-376833L ✓   | XRD-95                  |
| X AD-376832L ✓ | XRD-94 <i>re-ingest</i> |
| ✓ AD-367458 ✕  | XRD-93 ✓                |
| AD-367457 ✓    | XRD-92-Volume 2         |
| AD-367456 ✓    | XRD-91-Volume 1         |
| AD-367455 ✓    | XRD-90                  |
| AD-367454 ✓    | XRD-89                  |
| AD-367453 ✓    | XRD-88                  |
| AD-367452 ✓    | XRD-87                  |
| AD-366764 ✓    | XRD-86                  |
| AD-376837L ✓   | XRD-99                  |
| AD-366758 ✓    | XRD-78                  |
| AD-366734 ✓    | XRD-44                  |
| AD-366763 ✓    | XRD-85                  |
| AD-376829L ✓   | XRD-77                  |
| ✓ AD-367462 ✕  | XRD-103 ✓               |
| ✓ AD-367463 ✕  | XRD-104 ✓               |
| AD-367461 ✕    | XRD-102 ✓               |
| AD-367460 ✓    | XRD-101                 |

TRC

18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114.

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

*Arldith Jarrett*  
ARDITH JARRETT  
Chief, Technical Resource Center